

I claim:

1. A stripper rubber having a generally cylindrical upper moiety and a dynamic generally frusto-conical lower moiety and having an inner diameter, wherein the upper and lower moieties cooperatively define a bore for receiving oil field equipment, the stripper rubber comprising:
  - a generally ring-shaped adapter insert at least partially within the stripper rubber and disposed toward the upper moiety of the stripper rubber; and
  - a structural retention assembly, the assembly further comprising:
    - one or more support members proximately and dynamically suspended from the stripper rubber upper moiety; and
    - one or more structural retention inserts at least partially within the stripper rubber and distally attached to the one or more support members,wherein the stripper rubber dynamically forms a fluid-tight seal around varying outer diameters of oil field equipment as the equipment is lowered or raised through the bore.

2. The stripper rubber of claim 1, wherein the one or more structural retention inserts at least partially maintain the profile of the stripper rubber against elastic deformation.
3. The stripper rubber of claim 1, wherein the adapter insert is adapted to connect the stripper rubber to drilling head equipment.
4. The stripper rubber of claim 3, wherein the adapter insert comprises a top and one or more cam pins extend longitudinally from the top.
5. The stripper rubber of claim 1, further comprising a resilient substrate within which the adapter insert and the structural retention assembly are at least partially embedded.
6. The stripper rubber of claim 5, wherein the one or more structural retention inserts further comprise one or more at least partial perforations through which the resilient substrate pervades to provide a strong mechanical bond between the substrate and the inserts.
7. The stripper rubber of claim 1, wherein the one or more support members are optionally detachable from the adapter insert.
8. The stripper rubber of claim 1, wherein at least one of the one or more support members is pivotally suspended from the adapter insert with a hinge.

9. The stripper rubber of claim 8, further comprising a hinge bracket and a hinge pin to mount the one or more support members on the upper moiety.
10. The stripper rubber of claim 1, wherein the one or more support members are selectively attachable and detachable from the one or more structural retention inserts.
11. a structural retention assembly for a stripper rubber, wherein the stripper rubber has a generally cylindrical upper moiety and a dynamic generally frusto-conical lower moiety, and wherein the upper and lower moieties cooperatively define a bore for receiving oil field equipment, the assembly comprising:
  - one or more support members dynamically suspended from the upper moiety; and
  - one or more structural retention inserts attached to at least one of the one or more support members distally from the upper moiety.
12. The assembly of claim 11, wherein the upper moiety further comprises an adapter insert.

13. The assembly of claim 12, wherein at least one of the one or more support members is dynamically suspended from the adapter insert.
14. The assembly of claim 12, wherein the adapter insert comprises one or more at least partial perforations to receive a resilient substrate to provide a strong mechanical bond between the substrate and the insert.
15. The assembly of claim 12, wherein at least one of the structural retention inserts comprises one or more at least partial perforations to receive a resilient substrate to provide a strong mechanical bond between the substrate and the insert.
16. The assembly of claim 11, wherein the support member reciprocally pivots radially from the upper moiety to provide dynamic dilation and contraction of the lower moiety.
17. The assembly of claim 11, wherein the assembly further comprises metal inserts.
18. The assembly of claim 11, wherein the assembly further comprises composite material inserts.
19. The assembly of claim 14, wherein the resilient substrate comprises rubber.

20. A method for providing a dynamic, fluid-tight seal around varying outer diameters of oil field equipment as the equipment is lowered or raised through a stripper rubber, such that the stripper rubber substantially resists longitudinal elastic deformation while the stripper rubber radially dilates or contracts around the equipment, the method comprising the steps of:

providing a stripper rubber having upper and lower moieties that cooperatively define a bore for receiving oil field equipment;

providing a generally ring-shaped adapter insert at least partially within the stripper rubber and disposed toward the upper moiety; and

providing a structural retention assembly at least partially within the stripper rubber and disposed toward the lower moiety, the assembly further comprising:

one or more support members proximately and dynamically suspended from the stripper rubber upper moiety; and

one or more structural retention inserts distally attached to the one or more rods,

such that the structural retention inserts and the support members cooperatively support the stripper rubber profile as the stripper rubber dynamically forms a fluid-tight seal around varying outer diameters of oil field equipment as the equipment is lowered or raised through the stripper rubber bore.